The kinetics of phenol degradation by immobilized pseudomonas sp in a repeated-batch process

ABSTRACT

The best operating conditions for phenol degradation by immobilized Pseudomonas sp in packed column were determined, and then evaluated in repeated batch cultures. The maximum degradation rate occurred in i) the support with 1.0 cm diameter or less, ii) loading rate of 2.5 ml/min, and iii) in culture supplemented with nutrient. At these conditions, the immobilized cells managed to remove 100% of 1000 ppm phenol within 24 hours, and repeated the same performance in the next six consecutive batches. This achievement was comparable to published data. The approach employed in this study provides a useful guideline in treating phenolic contaminants using packed reactor system.